

Environment and Sustainability in Horticulture

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Environment & sustainability issues of concern

- NPE

- Deforestation (250-300 thousand ha/year)
- Land degradation
- Wildlife depletion
- Soil erosion
- Loss of productivity
- Inadequate sanitation
- Air and water pollution

Issues related to climate change

- Mean annual temperatures have increased by 1.3°C since 1960
 - $0.6^{\circ}\text{C}/\text{decade}$ and 10 times higher than global rate or that of Southern Africa
 - This constrains crop yields
- Mean annual rainfall has decreased by 1.9 mm per month (2.3%) per decade
 - Large decrease in the December-January-February rainfall ($7.1\text{mm}/\text{month}/\text{decade}$)

Issues cont'd

- General trends are towards:
 - Higher average temperature
 - Possible decrease in total rainfall
 - But data on emergency events suggest a drastic increase in flood events
- All in all, this climatic variability has impacts through:
 - Low frequency high impact extreme weather events (droughts & floods)
 - High frequency low impact events (erratic rainfall, warmer days & nights, emergence of pests)

Issues in horticulture

- No data on environment and sustainability issues specific to horticulture sector
- Issues captured as they relate to agricultural sector as a whole:
 - Land degradation
 - Contamination of surface and underground water with fertilizers and chemicals
 - Horticultural marketing putting greater challenges on city authorities to clear large heaps of discarded produce in and around markets

Issues in horticulture cont'd

- Impacts/consequences of climate change
 - Reduced water availability
 - Increased irrigation cost as more water needed to apply due to increase in temperatures
 - Reducing produce quality due to increasing temperatures
 - Increase in pests/diseases even in the cool dry season because temperatures have increased
 - Missing a whole cropping season due to late start of rains
 - ✓ e.g. rain-fed rape has to be harvested by January to escape pest/disease pressure

Institutional arrangements for Addressing issues

- No arrangement specific to horticulture sector
- Environmental issues a mandate of Government ministry (MTENR), under which is the ECZ (statutory body to protect environment & control pollution)
- MTENR has established the Climate Change Facilitating Unit (CCFU)
- National Adaptation Plan of Action (NAPA) submitted in 2007

Management of climate change impacts on horticulture

- Adaptation measures at production levels:
 - Relocating to higher grounds
 - Planting early, drought resistant varieties/crops
 - Using drip irrigation
 - Water harvesting
 - Mulching & organic manure
 - Minimum tillage
 - other conservation agriculture techniques

Management of impacts cont'd

- No specific responses specific to horticultural production & marketing
- CCFU is developing a National Climate Change Response Strategy (NCCRS)
 - Building on existing national and regional priorities
 - So far reactions have been ad hoc and uncoordinated and achievements limited
- Other donor supported activities related to addressing climate change issues also going on (see position paper)

Regional coordination

- Zambia a part of the 12th AMCEN
 - Need to integrate Africa's existing and new climate change programmes under a consolidated framework
- A member of a number of adaption, mitigation & supporting measures regional programmes
 - The majority are SADC based
 - COMESA Climate Change Initiative
 - Africa Bio-Carbon Fund (part of Africa Bio-Carbon Initiative)

Thank you